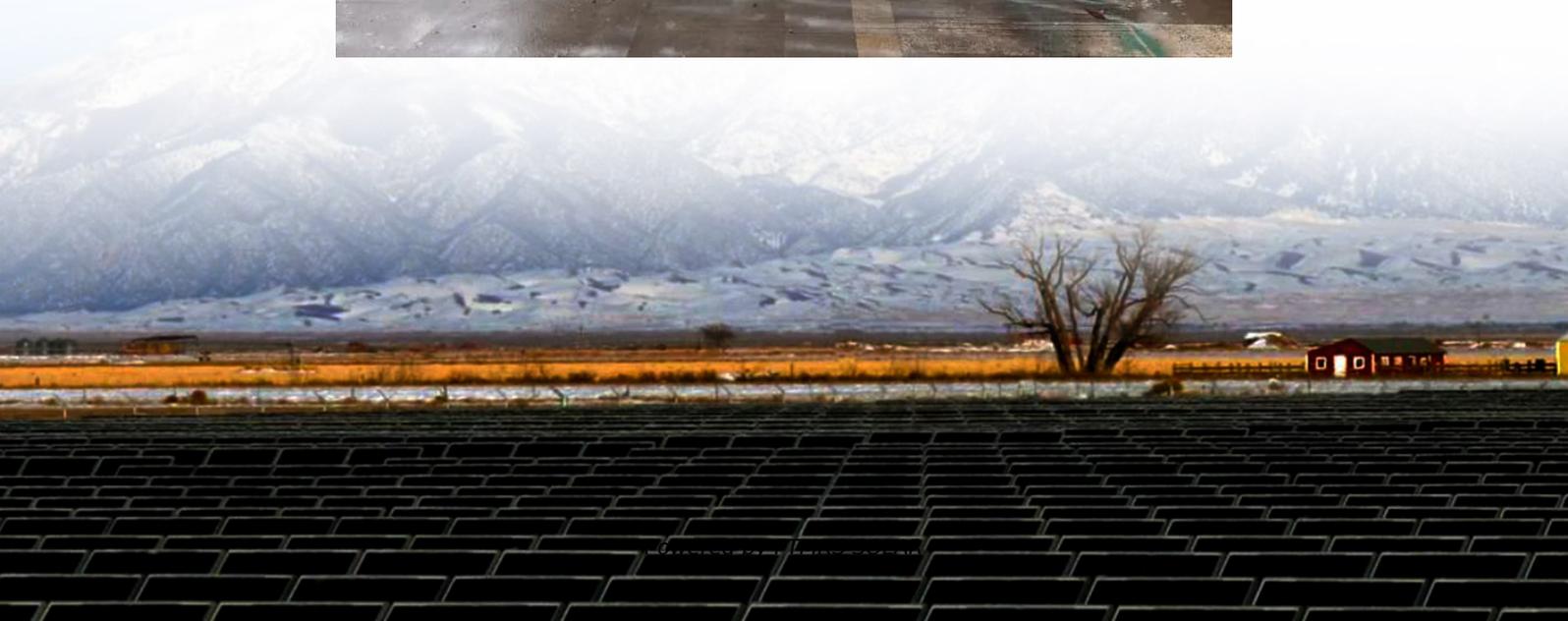


Monitor whether to use solar panels or solar panels





Overview

Why should you monitor your solar panels?

Solar panels are a long-term investment, and tracking their performance ensures you get the most out of your system. Monitoring helps you: Without proper monitoring, you might miss drops in efficiency that cost you energy and money over time.

How to monitor solar panel output?

There are two main methods: smart monitoring (automated, often app-based) and manual monitoring (basic, hands-on tracking). [How to Monitor Solar Panel Output \(Tools, Apps and Metrics\)](#). Here are some of the most reliable tools to monitor solar output, for both grid-tied and off-grid systems:.

What is a solar monitoring system?

Solar monitoring systems provide a real-time snapshot of solar energy production data from your home solar system. A good monitoring system can tell you when one or more panels (aka “modules”) isn’t producing as much energy as others, or whether there’s some sort of electrical fault causing you to miss out on precious kilowatt-hours (kWh).

What makes a good solar energy monitoring system?

Effective energy consumption tracking is a fundamental aspect of any top-tier solar energy monitoring device. When evaluating these systems, you’ll want to prioritize features that provide real-time electricity usage data, allowing for continuous monitoring of consumption patterns.



Monitor whether to use solar panels or solar panels

Best Solar Monitoring Systems For 2025

What Are Solar Monitoring Systems Used for?Types of Solar Panel Monitoring SystemsThe Bottom Line When It Comes to Solar MonitoringSolar monitoring systems provide a real-time snapshot of solar energy production data from your home solar system. A good monitoring system can tell you when one or more panels (aka "modules") isn't producing as much energy as others, or whether there's some sort of electrical fault causing you to miss out on precious kilowatt-hours (kWh). You can See more on solarreviews #b_results .b_vidAns{border-radius:6px;box-shadow:0 0 0 1px rgba(0,0,0,.05);padding:16px

```
20px;gap:10px;background:#fff}@charset "UTF-8";#b_results .b_ans.b_vidAns{box-shadow:none!important;padding:var(--smtc-gap-between-content-medium) 0!important;background:var(--bing-smtc-background-ctrl-fade-on-image-stop-0)}#b_results .b_ans.b_vidAns #serpvidans.vsacf .mc_vtvc,#b_results .b_ans.b_vidAns #serpvidans.vsacf .mc_vtvc_th,#b_results .b_ans.b_vidAns #serpvidans.vsacf .cico,#b_results .b_ans.b_vidAns #serpvidans.vsacf .mc_vtvc_htb,#b_results .b_ans.b_vidAns #serpvidans.vsacf .vrhc,#b_results .b_ans.b_vidAns #serpvidans.vsacf .vrhcp,#b_results .b_ans.b_vidAns #serpvidans.vsacf .vrhtc,#b_results .b_ans.b_vidAns #serpvidans.vsacf .vrhtpc{border-radius:var(--mai-smtc-corner-list-card-nested-default)}#b_results .b_ans.b_vidAns #serpvidans.vsacf .mmlist .mc_vtvc,#b_results .b_ans.b_vidAns #serpvidans.vsacf .mmlist .mc_vtvc .mc_vtvc_meta{margin:0}#b_results .b_ans.b_vidAns #serpvidans.vsacf .mmlist .mc_vtvc .mc_vtvc_meta .mc_vtvc_meta_channel,#b_results .b_ans.b_vidAns #serpvidans.vsacf .mmlist .mc_vtvc .mc_vtvc_meta .mc_vtvc_meta_row_channel{color:var(--smtc-foreground-content-neutral-primary)}#serpvidans.vsacf,#serpvidans.vsacf .expctn .expbody,#serpvidans.vsacf .mmlist{display:flex;flex-direction:column;gap:var(--smtc-gap-between-content-medium)}#serpvidans.vsacf .cico{height:auto}#serpvidans.vsacf .mc_vtvc_ban_lo{top:0;right:auto}#serpvidans.vsacf .mc_cwvc .mc_vtvc .mc_vtvc_meta,#serpvidans.vsacf .mmlist .mc_vtvc .mc_vtvc_meta{height:auto;padding:var(--smtc-gap-between-content-xx-small) 0 var(--smtc-gap-between-content-xx-small) var(--smtc-gap-between-content-medium);display:flex;flex-direction:column;justify-content:space-between}#serpvidans.vsacf .mc_cwvc .mc_vtvc .mc_vtvc_meta .mc_vtvc_title,#serpvidans.vsacf .mmlist .mc_vtvc .mc_vtvc_meta .mc_vtvc_title{color:var(--smtc-ctrl-link-foreground-brand-rest);font:var(--bing-smtc-text-global-body2);height:auto;display:-webkit-box;-webkit-line-clamp:2;-webkit-box-orient:vertical}#serpvidans.vsacf .mc_cwvc .mc_vtvc .mc_vtvc_meta .mc_vtvc_meta_block_area,#serpvidans.vsacf .mc_cwvc .mc_vtvc .mc_vtvc_meta .mc_vtvc_meta_block,#serpvidans.vsacf .mmlist .mc_vtvc .mc_vtvc_meta .mc_vtvc_meta_block_area,#serpvidans.vsacf .mmlist .mc_vtvc .mc_vtvc_meta .mc_vtvc_meta_block{display:flex;flex-direction:column;gap:var(--smtc-padding-ctrl-text-side)}#serpvidans.vsacf .mc_cwvc .mc_vtvc .mc_vtvc_meta .mc_vtvc_meta_block_area .mc_vtvc_meta_row,#serpvidans.vsacf .mc_cwvc .mc_vtvc .mc_vtvc_meta .mc_vtvc_meta_block .mc_vtvc_meta_row,#serpvidans.vsacf .mmlist .mc_vtvc .mc_vtvc_meta .mc_vtvc_meta_block_area .mc_vtvc_meta_row{color:var(--smtc-foreground-content-neutral-primary);height:var(--mai-smtc-padding-card-default);font:var(--bing-smtc-text-global-caption1)}#serpvidans.vsacf .mc_cwvc .mc_vtvc .mc_vtvc_meta .mc_vtvc_meta_block_area .mc_vtvc_meta_row .mc_vtvc_meta_row_channel::before,#serpvidans.vsacf .mc_cwvc .mc_vtvc .mc_vtvc_meta .mc_vtvc_meta_block .mc_vtvc_meta_row .mc_vtvc_meta_row_channel::before,#serpvidans.vsacf .mmlist .mc_vtvc .mc_vtvc_meta .mc_vtvc_meta_block_area .mc_vtvc_meta_row
```



```
.mc_vtvc_meta_row_channel::before,#serpvidans.vsacf .mmlist .mc_vtvc .mc_vtvc_meta
.mc_vtvc_meta_block .mc_vtvc_meta_row .mc_vtvc_meta_row_channel::before{content:" .
"}#serpvidans.vsacf .mc_cwvc .mc_vtvc .mc_vtvc_meta .mc_vtvc_meta_block_area
.mc_vtvc_meta_pubdate,#serpvidans.vsacf .mc_cwvc .mc_vtvc .mc_vtvc_meta
.mc_vtvc_meta_block .mc_vtvc_meta_pubdate,#serpvidans.vsacf .mmlist .mc_vtvc
.mc_vtvc_meta .mc_vtvc_meta_block_area .mc_vtvc_meta_pubdate,#serpvidans.vsacf .mmlist
.mc_vtvc .mc_vtvc_meta .mc_vtvc_meta_block .mc_vtvc_meta_pubdate{color:var(--bing-smtc-
foreground-content-neutral-tertiary);padding-bottom:0}.vsacf .mc_cwvc .mc_vtvc_con_rc,.vsacf
.mmlist .mc_vtvc_con_rc{display:flex}.vsacf .mc_cwvc .mc_vtvc_con_rc .mc_vtvc_meta_w,.vsacf
.mmlist .mc_vtvc_con_rc .mc_vtvc_meta_w{height:auto}.vsacf .b_title{padding-left:var(--mai-
smtc-padding-card-default)}.vsacf .b_title .mmtitle{font:var(--bing-smtc-text-global-
subtitle1-strong);margin-bottom:0}.vsacf .b_title .mmtitle a::after{content:"";margin:5px 5px 0
0;border-top:2px solid var(--smtc-foreground-content-neutral-primary);border-right:2px solid
var(--smtc-foreground-content-neutral-primary);background-size:7px 7px;width:7px;height:7px;tr
ansform:rotate(45deg);display:inline-block;margin-left:4px}#serpvidans.vsacf .b_title
.mmtitle{margin-bottom:0}#serpvidans.vsacf .b_title .mmtitle a{color:var(--smtc-foreground-
content-neutral-primary)}#serpvidans.vsacf .cardless.mmlist .mc_vtvc_con_rc,#serpvidans.vsacf
.cardless.mmlist .mc_vtvc_th{height:auto}#serpvidans.vsacf
.vsb_tr_c.va_tt{margin:0}#serpvidans.vsacf .vtbc .mv_vtvc_play,#serpvidans.vsacf .vtbc
.mv_vtvc_play_ext{position:static}#serpvidans.vsacf .va_tt
.mc_vtvc_ban_lo{display:block}#serpvidans.vsacf .mc_bc{width:auto;border-radius:var(--smtc-
ctrl-badge-sm-corner);padding:var(--smtc-padding-ctrl-text-side) var(--smtc-gap-between-
content-xx-small)}#serpvidans.vsacf .rmts .mc_bc ems{display:none}#serpvidans.vsacf
a.vsb_tr_t{color:var(--smtc-foreground-content-neutral-primary)}.vsacf .va_tt .vsb_tr_chd
.mc_vtvc_th_dock.rmoverlay{height:36px}.vsacf .va_tt .vsb_tr_chd .mc_vtvc_th_dock{height:92p
x;background:linear-gradient(180deg,var(--bing-smtc-background-ctrl-fade-on-image-stop-0)
0%,var(--mai-smtc-background-ctrl-on-image-rest) 100%)}.vsacf .va_tt a.vsb_tr_t{padding:0
20px;font:var(--acf-font-title-2-strong)}.vsacf .va_tt .vsb_tr_chd .mc_vtvc .mc_vtvc_meta,.vsacf
.va_tt .vsb_tr_chd .mc_vtvc .mc_vtvc_title{color:var(--mai-smtc-foreground-ctrl-on-image-
rest)}.vsacf span.vcmt_ctt{font:var(--bing-smtc-text-global-caption2);margin:var(--smtc-gap-
between-content-xx-small) 0 0;height:16px}#serpvidans.vsacf .vsb_tr_chd .mc_vtvc_tot
.mc_vtvc_title strong{font-size:14px;line-height:20px;display:unset}#serpvidans.vsacf .va_tt
.b_slidr .slide:not(:first-child){margin-left:var(--smtc-gap-between-content-
small)}#serpvidans.vsacf .va_tt .vsb_tr_chd .mc_vtvc .mc_vtvc_title{white-space:normal;display:
-webkit-box;-webkit-line-clamp:2;-webkit-box-orient:vertical}#serpvidans.vsacf
.b_module_expansion_control .b_btnContainer .b_CompactExpansion{background-color:var(--bin
g-smtc-background-ctrl-neutral-rest);display:flex;justify-content:center;align-
items:center;gap:4px;width:fit-content;height:auto;padding:8px 12px}#serpvidans.vsacf
.b_module_expansion_control .b_btnContainer .b_CompactExpansion .b_CompactExpansionBtnTe
xt{font:var(--bing-smtc-text-global-caption1-strong);color:var(--bing-smtc-foreground-content-
brand-rest)}#serpvidans.vsacf .b_module_expansion_control .b_btnContainer
.b_CompactExpansion .b_arrow{display:flex;margin:0;height:auto}#serpvidans.vsacf
.b_module_expansion_control .b_btnContainer .b_CompactExpansion .b_arrow
path#Shape{fill:var(--bing-smtc-foreground-content-brand-rest)}#serpvidans.vsacf
.b_module_expansion_control .b_btnContainer::after{content:"";position:absolute;width:100%;bo
ttom:20px;left:0;height:1px;border-radius:1px;background:var(--smtc-stroke-ctrl-on-neutral-
rest)}#b_results .b_ans.b_vidAns{box-shadow:none;padding:12px 20px 0}#b_results
.b_ans.b_vidAns .vasac{padding:unset;margin:0}#b_results .b_ans.b_vidAns .vsa
.b_attribution{padding-bottom:0}#b_results .b_ans.b_vidAns .cardless
.salink{margin:0}#b_results .b_ans.b_vidAns .mmlist .mc_vtvc{margin-top:10px}#b_results
.b_ans.b_vidAns .mmlist .mc_vtvc .mc_vtvc_meta{display:flex;flex-direction:column;justify-
content:space-between;margin:0 10px 4px 12px}#b_results .b_ans.b_vidAns .mmlist .mc_vtvc
```



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.mc_vtvc_meta .mc_vtvc_meta_channel{color:#111}#b_results .b_ans.b_vidAns .mmlist
.mc_vtvc .mc_vtvc_meta .mc_vtvc_meta_row_channel,#b_results .b_ans.b_vidAns .mmlist
.mc_vtvc .mc_vtvc_meta .mc_vtvc_meta_block_area{color:#666}#b_results .b_ans.b_vidAns
.mmlist .mc_vtvc .mc_vtvc_meta .mc_vtvc_meta_block_area{bottom:0;height:unset}.b_dark
.vsa.cardless .mc_vtvc{background-color:unset}.mmlist>a{display:block}.mc_fh{height:100%;
border-radius:6px}.mc_tc_bs{overflow:hidden}.mmlist .mc_vtvc .mc_vtvc_meta { padding: 12px
16px 16px 16px; } .mmlist .mc_vtvc .mc_vtvc_meta_w { height: 112px; margin-top: -0px; }
.mmlist .mc_vtvc .mc_vtvc_title { height: 44px; line-height: 22px; margin-bottom: 0px; margin-
top: 0px; } .mmlist .mc_vtvc .mc_vtvc_meta_block_area { height: 40px; } .mmlist .mc_vtvc
.vtmu, .mmlist .mc_vtvc .vtpl { bottom: 120px; } .mmlist .mc_vtvc_th_dock { height: 112px; }
.mmlist .mc_vtvc_th .cico { height: 131px; } .mc_vtvc{background-color:#fff;box-shadow:0 0 0
1px rgba(0,0,0,.05);line-height:0;margin:0;position:relative;border-radius:6px;overflow:hidden}.
mc_vtvc.noshadow{box-shadow:none}.mc_vtvc_con_rc{border-radius:6px;overflow:hidden;positi
on:relative}.mc_vtvc>a{color:#71777d;display:block;text-
decoration:none;width:100%}.mc_vtvc>a:focus::after{outline:2px solid #00a89d;width:100%;he
ight:100%;content:"";outline-offset:-2px;position:absolute;top:0;left:0}.mc_vtvc_th{background-
color:#d5d5d5;position:relative}.mc_vtvc_th .cico{border-radius:0}.mc_vtvc_ban_lo,.mc_vtvc_ba
n_up{position:absolute;vertical-align:middle}.mc_vtvc_ban_lo{bottom:0}.mc_vtvc_ban_up{top:0
}.mc_vtvc_title{font-weight:normal;margin-
bottom:11px;overflow:hidden;color:#111;height:54px;line-height:18px}.mc_vtvc_title
a{display:inline-block;color:#111}.mc_vtvc_title a:hover{text-decoration:underline}.mc_vtvc_src
_ico{float:left;margin-right:4px}.mc_vtvc_act{height:16px;margin-top:-40px;padding:12px 8px;z-
-index:1}.mc_vtvc_actc{right:16px;bottom:16px;position:absolute;display:inline-block;z-
index:1}.mc_vtvc_act_sep{border-top:1px solid #d5d5d5;height:40px;margin:0 8px}.mc_vtvc_fh
.mc_vtvc_act_sep,.mc_vtvc_fh .mc_vtvc_act{visibility:hidden}#serpvidans .b_topTitle{margin-bo
ttom:8px}.mc_vtvc_htc{width:100%;height:100%;position:absolute;top:0;bottom:0;left:0;right:0
}.mc_vtvc_htb{width:100%;height:100%;background:rgba(0,0,0,.7);position:absolute;top:0;botto
m:0;left:0;right:0}.mc_vtvc_ht{width:100%;padding:0 16px;line-height:16px;color:#fff;text-decor
ation:underline;word-break:break-word;box-sizing:border-box;vertical-align:middle;text-align:cen
ter}.mc_vtvc_th_live_b{background-color:#c80000;color:#fff;display:inline-block;padding:2px
8px;font:11px/14px Arial;border-radius:2px;text-
transform:uppercase;height:15px;width:26px;position:absolute;left:8px;top:110px}.isvctrl .isv
.mc_vtvc_ban_up{left:0;right:initial}.mc_vtvc_ban_lo,.mc_vtvc_ban_up{right:0}.vt_text.b_IRight
.b_ILeft{margin:0 0 0 1px;height:14px;line-height:14px;padding:2px 8px;background:rgba(0,0,0,.
75);border-radius:2px;font-weight:bold}.mc_vthtb{width:100%;height:100%;background:rgba(0,
0,0,.7);position:absolute;top:0;bottom:0;left:0;right:0;display:table}.mc_vtht{width:100%;paddin
g:0 16px;line-height:16px;color:#fff;text-decoration:underline;word-break:break-word;box-
sizing:border-box;vertical-align:middle;text-align:center;display:table-cell}.vt_text.b_IRight
.b_ILeft{margin:0 0 0 1px;height:14px;line-height:14px;padding:2px 8px;background:rgba(0,0,0,.
75);border-radius:2px;font-weight:bold}.emptyStyleForDebuggingPurpose{top:0}.emptyStyleFor
DebuggingPurpose{top:0}.mc_vtvc_center_play{width:32px;height:32px;background-size:contai
n;position:absolute;margin:auto;bottom:0;top:0;left:0;right:0;box-shadow:none;border-radius:0}.
mc_vtvc_center_play.rmvbg{width:32px;height:32px;background-
image:none}.mc_vtvc_htb,.mc_vtvc_ht{display:none}.vt_onhv
.mc_vtvc_htb{display:table}.vt_onhv .mc_vtvc_ht{display:table-
cell}.mc_vtvc_center_play{display:inline-block}.vt_onhv
.mc_vtvc_center_play{display:none}.mc_vtvc .vtmu,.mc_vtvc .vtpl{bottom:163px}.vsarf
.mc_vtvc .vtmu,.vsarf .mc_vtvc .vtpl{bottom:122px}.svarh #mmcar .mc_vtvc .vtmu,.svarh
#mmcar .mc_vtvc .vtpl{bottom:137px}.svarht #mmcar .mc_vtvc .vtmu,.svarht #mmcar
.mc_vtvc .vtpl{top:8px;left:8px}.mc_vtvc_center_play{background-image:url(data:image/svg+x
ml,%3Csvg%20width%3D%2232%22%20height%3D%2232%22%20viewBox%3D%220%200%20
32%2032%22%20fill%3D%22none%22%20xmlns%3D%22http%3A%2F%2F%2F2000%2Fsvg%22
```




```
buggingPurpose{top:0}.emptyStyleForDebuggingPurpose{top:0}.emptyStyleForDebuggingPurpo
se{top:0}.emptyStyleForDebuggingPurpose{top:0}.emptyStyleForDebuggingPurpose{top:0}.m
msi{height:16px;width:16px;position:relative;top:5px;padding-right:var(--smtc-gap-between-
content-xx-small)}.mmsi-microsoftnews,.mmsi-msn{top:3px}.vrhdata{display:none}.vtbc .mv_v
tvc_play{display:inline-block;position:absolute;bottom:8px;left:9px;height:8px;width:7px}.vtbc
.mv_vtvc_play_ext{background:url(/rp/Lp38sn_04jegSK0IHxZVxyp-yKQ.png) -172px
-31px;display:inline-block;height:8px;width:12px;position:absolute;bottom:8px;left:6px}.vtbc
.pivot{height:20px;width:8px;min-width:8px}.vtbc .mv_vtvc_play{background:url(data:image/pn
g;base64,iVBORw0KGgoAAAANSUUhEUgAAAACAAAIBAMAAADHKvg1AAAIVBMVEX//////////
//////////9/gMdvAAAACnRSTIMAETNEVWAlmbvuo4D1oAAAAB9JREFUCB1jmMoABKuaQcSqQh
CxKgFGgLhNQlqpQAwA8zkLyQAI6F0AAAAASUVORK5CYII=)}.mc_bc_w{height:18px;padding:8px;
text-align:right}.mc_bc{background-color:rgba(0,0,0,.75);padding:2px 8px;line-height:14px;color
:#fff;display:inline-block;vertical-align:middle;border-radius:2px;font-weight:bold}.mc_bc_w
.pivot{text-align:center;margin-right:1px;height:14px}.vsarr .mmgrid .mc_bc_w .mc_bc{backgro
und-color:rgba(0,0,0,.75);opacity:1}.mmgrid>div{width:197px;display:inline-block;margin-
right:8px;margin-bottom:8px;box-shadow:0 0 1px rgba(0,0,0,.05);position:relative;vertical-
align:top;overflow:hidden;white-space:normal;border-radius:6px}.vsarr .mmgrid>div,.vsarr1stbig
.mmgrid>div{margin-right:8px;margin-bottom:8px}#serpvidansrr .mc_vtvc
.mc_vtvc_meta{height:auto}#serpvidansrr .mc_vtvc .mc_vtvc_title{display:-webkit-box;-webkit-
line-clamp:2;-webkit-box-orient:vertical}.mmgrid .mc_tc{border:0}.vsa .mmgrid>div:nth-
child(3n){margin-right:0}.vsa .b_moreLink{padding-top:4px}#serpvidansrr
.mc_vtvc_meta_row{line-height:18px;font-size:100%;height:17px}.vsarr .mmgrid>div:nth-
child(2n){margin-right:0}#serpvidansrr .mc_vtvc .vtmu,#serpvidansrr .mc_vtvc
.vtpl{bottom:128px}.vsarr1stbig .mmgrid>div:nth-child(2){margin-
right:0}#serpvidansrr.uipolish .mc_vtvc_meta_pubdate,#serpvidansrr.uipolish
.mc_vtvc_meta_channel,#serpvidansrr.uipolish #vidans2 .b_videocard .video_metadata
.video_source{color:#767676}#serpvidansrr #vidans2 .b_videocard
.video_metadata_container,#serpvidansrr #vidans2 .b_videocard .video_metadata_container
.video_metadata>h3{width:100%}@media(max-width:1362.9px){#serpvidansrr
.mmgrid>div{width:168px;height:206px}#serpvidansrr .mmgrid>div .cico,#serpvidansrr
.mmgrid>div .cico .rms_img{width:168px;height:100px}#serpvidansrr .mc_vtvc
.mc_vtvc_meta{padding:12px}#serpvidansrr .mc_vtvc .mc_vtvc_title{height:32px;line-
height:16px;margin-bottom:16px}#serpvidansrr .mc_vtvc
.mc_vtvc_meta_block_area{height:34px}#serpvidansrr .mc_vtvc_meta_row{line-
height:15px;font-size:13px;height:15px}#serpvidansrr .mc_vtvc_meta_pubdate{padding-
bottom:4px}#serpvidansrr .mc_vtvc .vtmu,#serpvidansrr .mc_vtvc
.vtpl{bottom:114px}#serpvidansrr #vidans2 .b_videocard .videoPlayer,#serpvidansrr #vidans2
.b_videocard .videoPlayer .cico,#serpvidansrr #vidans2 .b_videocard .videoPlayer .cico .rms_img
{width:343px!important;height:194px!important;margin-right:0} @media(max-
width:1274.9px){#serpvidansrr .mmgrid>div{width:124px;height:164px}#serpvidansrr
.mmgrid>div .cico,#serpvidansrr .mmgrid>div .cico
.rms_img{width:124px;height:76px}#serpvidansrr .mc_vtvc
.mc_vtvc_meta{padding:8px}#serpvidansrr .mc_vtvc .mc_vtvc_title{height:32px;line-
height:16px;margin-bottom:12px}#serpvidansrr .mc_vtvc
.mc_vtvc_meta_block_area{height:28px}#serpvidansrr .mc_vtvc_meta_row{line-
height:13px;font-size:11px;height:13px}#serpvidansrr .mc_vtvc_meta_pubdate{padding-
bottom:2px}#serpvidansrr .mc_vtvc .vtmu,#serpvidansrr .mc_vtvc
.vtpl{bottom:96px}#serpvidansrr #vidans2 .b_videocard .videoPlayer,#serpvidansrr #vidans2
.b_videocard .videoPlayer .cico,#serpvidansrr #vidans2 .b_videocard .videoPlayer .cico
.rms_img{width:256px!important;height:144px!important;margin-right:0}#serpvidansrr
.maskthumb .mc_bc_w{padding:8px 4px 4px 8px}#serpvidansrr.withsplitline .mmgrid>div:nth-
last-child(1),#serpvidansrr.withsplitline .mmgrid>div:nth-last-child(2){margin-
```



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bottom:24px}#serpvidansrr.withsplitline .mmgrid{border-bottom:1px solid #ececec;margin-bottom:16px}#serpvidansrr #vidans2 .b_videocard .video_metadata{max-width:auto;padding:12px 16px}#serpvidansrr #vidans2 .b_videocard{margin-bottom:12px;box-shadow:0 0 1px rgba(0,0,0,.05),0 2px 3px rgba(0,0,0,.1);border-radius:6px}#serpvidansrr .b_rich{padding-top:0}#serpvidansrr #vidans2 .videoPlayer{border-radius:6px 6px 0 0;overflow:hidden}#serpvidansrr #vidans2 .b_videocard .video_metadata>h3{white-space:nowrap;overflow:hidden;text-overflow:ellipsis;-webkit-line-clamp:1;line-height:15px;height:15px;font-size:13px;color:#000;margin-bottom:20px;font-family:Arial,Helvetica,Sans-Serif;font-style:normal;display:block}#serpvidansrr.vsarr1stbig #vidans2 .b_videocard .video_metadata .actionmenu{display:none}#serpvidansrr #vidans2 .b_videocard .video_summary,#serpvidansrr #vidans2 .b_videocard .video_source{line-height:15px}#serpvidansrr #vidans2 .b_videocard .videoPlayer .vtbc{right:0}.vrhc line.nhvpv .pffvi,.vrhc line.nhvpv[data-tps="S"] .pffvt,.vrhc line.nhvpv[data-tps="M"] .pffvt,.vrhc line.nhvpv[data-tps="L"] .pffvt{display:inline-flex}.vrhc line.nhvpv .vrhct.pffv .vrhol{display:none}.vrhc line.nhvpv .vrhct.pffv .player_ol{background:var(--mai-smtc-background-ctrl-on-image-hover);transition:background-color .5s;display:flex;align-items:center;justify-content:center;padding:var(--smtc-gap-between-content-x-small);gap:var(--smtc-gap-between-content-x-small);box-sizing:border-box}.mc_vtvc_th img{transition:all .3s ease-out}.nhvpv+.mc_vtvc_th img{transform:scale(1.1)}.smtplayerhtml5{height:100%;width:100%;overflow:hidden}.smtplayerhtml5 video{min-height:100%;min-width:100%}.smtplayerhtml5 .videoplaying{background-color:#000}.smtplayerhtml5.hide{display:none}.pffvt{display:none;color:var(--mai-smtc-foreground-ctrl-on-image-rest);font:var(--bing-smtc-text-global-subtitle2-strong)}.pffvi{mask:url(/rp/ui07wU6K7FR_inzG7DRbP1i8fGo.svg) center no-repeat;mask-size:12px;background:var(--bing-smtc-background-card-on-image-default);width:20px;height:20px;flex-shrink:0;align-self:flex-start}[data-tps="L"] .pffvt{font:var(--bing-smtc-text-global-subtitle2-strong)}[data-tps="L"] .pffvi{width:22px;height:22px;mask-size:16px}[data-tps="S"] .pffvt{font-size:0}[data-tps="S"] .pffvi{width:24px;height:24px;mask-size:24px;align-self:center}.hvpv.h5s .pffvt{display:inline-flex}.hvpv.h5s .vrhct.pffv .vrhol{display:none}.hvpv.h5s .vrhct.pffv .player_ol{background:var(--mai-smtc-background-ctrl-on-image-hover);transition:background-color .5s;display:flex;align-items:center;justify-content:center;padding:var(--smtc-gap-between-content-x-small);gap:var(--smtc-gap-between-content-x-small);box-sizing:border-box}.pffvt{text-decoration:underline}.vrhcp .vrhol{position:absolute;width:100%;height:35px;max-height:35px;bottom:0;left:0;padding:0;background:none;display:block;z-index:9}.vrhcp .vrhol.hide,.vrhcp .vrhol .hide{display:none}.vrhot{white-space:nowrap;text-overflow:ellipsis;overflow:hidden;display:inline-block;position:absolute;max-width:240px;height:18px;line-height:14px;margin-left:8px;top:10px;left:0;right:0;border-radius:2px;padding-right:8px}.vrhot div{display:inline-block}.vrhot nt{color:#fff;font-size:11px;font-weight:bold;background-color:rgba(0,0,0,.75);padding:2px 8px;margin-left:0;top:0;box-sizing:border-box;position:relative}.vrhc .ricons{position:absolute;right:8px;top:10px;left:auto;bottom:auto;height:18px;display:inline-block;cursor:pointer}.vrhol.icons_1 .vrhot{margin-right:27px}.vrhol.icons_2 .vrhot{margin-right:49px}.vrhol.icons_3 .vrhot{margin-right:79px}.vrhol .vrhot nt,.vsb_tr_chd .vrhol.icons_1 .vrhot{margin-right:0}.vpb{position:absolute;display:block;bottom:0;left:0;height:4px}.vpb div{position:absolute}.vpb nt{width:0;background:#fff}.vpb nt.test{display:none}.vpb.back{background-color:#999}.vrhcp .vrhol.npb{height:36px;max-height:36px}.vrhol .vadda{width:22px;height:18px;padding:0;margin-right:0;margin-left:2px;bottom:0;position:relative;display:inline-block;z-index:1;background:rgba(0,0,0,.75);border-radius:2px;overflow:hidden}.vrhol .vadda.hide{display:none}.vrhol .vadda .mc_vfaa{margin:3px 5px}.ricons .vol{float:left}.ricons .adultFlag{float:right}.vol{width:22px;height:18px;bottom:0;margin-left:1px;margin-right:1px;position:relative;display:inline-block}.vol.hide,.vol .hide{display:none}.vol .bg{background:rgba(0,0,0,.75);border-radius:2px}.vol.bg,.vol nt{position:absolute;bottom:0}.vol .vol.bg.volnb{border-radius:0 0 2px 2px}.vol
```



```

.volsliderHandle.bg{border-radius:2px 2px 0 0}.vol nt .volsliderHandle{height:70px;display:none
;width:22px;float:left;bottom:18px;position:absolute;display:block}.vol nt
.volsliderHandle.hide{display:none}.volsliderHandle .vsb{height:54px;width:4px;background-
color:#999;margin:9px auto 8px;position:relative;display:block;border-
radius:2px}.volsliderHandle .vsh{height:6px;width:14px;padding:9px 7px 9px 7px;margin:0
-12px;display:block;position:absolute;top:30px}.volsliderHandle
.vsh.hide{display:none}.volsliderHandle .vshi{height:4px;width:14px;background-
color:#fff;border-radius:2px}.volMuteIcon{width:16px;height:14px;margin:2px 4px;float:left}.vol
MuteHandle{width:22px;height:18px}.vo{background:url(/rp/ffZxBXEIP9WYOO0jhTaElyLhEVU.sv
g) no-repeat}.vm{background:url(/rp/fsX-ZVd03wB2TL0vmQJxSp4U9vs.svg) no-
repeat}.vl{background:url(/rp/YXYMPC1Rry_XJGc7Yg8IR4B2eEs.svg) no-
repeat}.vf{background:url(/rp/NosrIR4amKTs1zYxWy3IaZN3HRk.svg) no-repeat}@media(forced-
colors:active){.vol{forced-color-adjust:none}}.vrhc line .vt_vp,.vrhc.popout
.vt_vp,.vrhc.mousefollow
.vt_vp{position:absolute;bottom:0;border:hidden;padding:0;top:0;left:0;z-index:3}.vrhtc
.hide{display:none}.vrh_clc .vt_vp,.vrh_clc .vrhtc .vrhi,.vrh_clc .player_ol{cursor:pointer}.vrh_clc
.cico{border-radius:0}.vrhtc{border:hidden;top:0;left:0;padding:0}.vrhc.mousefollow
.vrhtc,.vrhc.popout .vrhtc{background-color:#999}.vrhtpc.load
.player_ol{background:url(/rp/_o2maogFDeUOsovPJL-ofEuxJ4.gif) center center no-repeat}.vrhc
line .vrhtc .vrhi,.vrhc.popout .vrhtc .vrhi,.vrhc.mousefollow .vrhtc .vrhi{position:absolute!importa
nt;border:hidden;z-index:2;padding:0;left:0;top:0}.player_ol{position:absolute;width:100%;heigh
t:100%;bottom:0;border:hidden;z-index:7}.vrhc.popout,.vrhc line,.vrhc.mousefollow{border-radi
us:6px;overflow:hidden;display:table-row-
group;background:none}.vrhc.popout,.vrhc.mousefollow{z-index:4;box-shadow:0 4px 4px
rgba(0,0,0,.1),0 2px 80px rgba(0,0,0,.2)}.vrhc line{z-index:1;margin:0}.vrhc.popout,.vrhc
line{position:absolute;top:0}.vrhc.popout{border:1px solid #fff}.vrhc.mousefollow{position:fixe
d}.vrhcp{position:relative;top:0;left:0;display:table-row}.vrhcp
.vrhtc{position:relative;overflow:hidden}.vrhc.hide{display:none}@keyframes
vh_fadein{from{opacity:0}to{opacity:1}}.vrhc:not(.hide){animation:vh_fadein 250ms}.vrhc line
img{color:transparent}.vrhc line.fullsize{height:100%}.vrhc,.vrhc: hover,.vrhc: link,.vrhc: active,.v
rhc: visited{color:#000;text-decoration:none}.vrhc.vrh_clc{cursor:pointer}a.hover-anchor{displa
y:block;height:100%;width:100%;text-
decoration:none}.vrhstat{height:0;overflow:hidden}Videos of Monitor Whether To Use Solar
Panels Or Solar PanelsWatch video on aztechsolar Smart Solar Monitoring Solutions , Aztech
Solaraztechsolar May 2, 2022Watch video on instructables DIY Solar Panel Monitoring System -
V2.0instructables 15.4K viewsMay 18, 2023Watch video on Amazon1:07Watch How to use solar
panels properly for maximum output? on Amazon LiveAmazonECO-WORTHY US3 months
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.rcimgcol .cico { background: unset; } .b_imgSet .b_hList li.square_m,.b_imgSet .b_hList
li.tall_m{width:75px}.b_imgSet .b_hList li.tall_mlb{width:113px}.b_imgSet .b_hList
li.tall_mln{width:96px}.b_imgSet .b_hList li.wide_m{width:128px}.b_imgSet.b_Card .b_hList
li{padding-left:1px;padding-right:9px}.b_imgSet.b_Card .b_hList li.tall_wfn{width:80px;padding-
right:6px}.b_imgSet.b_Card .b_hList li:last-child{padding-right:1px}.b_imgSet.b_Card
.b_imgSetData{padding:0 8px 8px;height:40px}.b_imgSet.b_Card .b_imgSetItem{box-shadow:0
0 1px rgba(0,0,0,.05),0 2px 3px 0 rgba(0,0,0,.1);border-radius:6px;overflow:hidden}.b_imgSet
.b_imgSetData p a{color:#444;outline-offset:0}.b_subModule .b_clearfix.b_mhdr .b_floatR
.b_moreLink,.b_subModule .b_clearfix.b_mhdr .b_floatR .b_moreLink:visited,.b_subModule>.b_mo
reLink,.b_subModule>.b_moreLink:visited{color:#767676}.b_imgSet .cico.b_placeholder{display
:flex;justify-content:center;background-color:#f5f5f5;background-clip:content-box}.b_imgSet
.cico.b_placeholder a{display:flex}.b_imgSet .cico.b_placeholder a
img{width:48px;height:48px;margin:auto}@media(max-width:1362.9px){#b_context
.b_entityTP .b_imgSet li:nth-child(5){display:none}.b_imgSet .b_hList li.wide_m:nth-

```



child(3){display:none}}@media(max-width:1274.9px){#b_context .b_entityTP .b_imgSet li:nth-child(4){display:none}.b_imgSet .b_hList li.wide_m:nth-child(2){display:none}}.rcimgcol .b_imgSet{content-visibility:auto;contain-intrinsic-size:1px 124px}.rcimgcol{height:108px;padding-top:var(--smtc-gap-between-content-x-small);padding-bottom:var(--smtc-gap-between-content-x-small)}.b_algo:has(.b_agh) .rcimgcol{padding-top:var(--smtc-gap-between-content-xx-small)}.rcimgcol .b_imgSet{overflow:hidden}.rcimgcol .b_imgSet ul{overflow-x:auto;overflow-y:hidden;white-space:nowrap;padding-left:var(--mai-smtc-padding-card-default)}.rcimgcol .b_imgSet ul::-webkit-scrollbar{-webkit-appearance:none}.rcimgcol .b_imgSet .b_hList>li{padding-right:var(--smtc-padding-ctrl-text-side)}.rcimgcol .b_imgSet .cico{border-radius:unset}.rcimgcol .b_imgSet .b_hList>li:first-child .cico,.rcimgcol .b_imgSet .b_hList>li:first-child .cico a{border-radius:unset;border-top-left-radius:var(--smtc-corner-card-rest);border-bottom-left-radius:var(--smtc-corner-card-rest);overflow:hidden}.rcimgcol .b_imgSet .b_hList>li:last-child .cico,.rcimgcol .b_imgSet .b_hList>li:last-child .cico a{border-radius:unset;border-top-right-radius:var(--smtc-corner-card-rest);border-bottom-right-radius:var(--smtc-corner-card-rest);overflow:hidden}.rcimgcol .rcimgcol .b_sideBleed{margin-left:unset;margin-right:unset}.rcimgcol .b_imgclgovr{cursor:pointer}.rcimgcol .b_imgclgovr .cico img: hover{transform:scale(1.05);transition:transform .5s ease}#b_content #b_results>.b_algo .b_caption:has(.rcimgcol){padding-right:var(--mai-smtc-padding-card-default);margin-right:calc(-1*var(--mai-smtc-padding-card-default));margin-left:calc(-1*var(--mai-smtc-padding-card-default));padding-left:var(--mai-smtc-padding-card-default)}.rcimgcol .b_imgSet .b_hList .cico a{display:flex;outline-offset:-2px}greenpowerclean 7 Best Solar Energy Monitoring Devices of 2025: Maximize ...5 days ago · To maximize your solar power output in 2025, consider investing in one of the top solar energy monitoring devices. Options like the Sense Energy Monitor with Solar, Eyedro ...

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